UPPER TRISHULI-1 HEP (216MW)			
Client	Doosan Heavy Industries & Construction		
DHI's Subcontractor	Power Construction Corporation of China		
REPLY COMMENT			
Subcontractor	Power Construction Corporation of China		
Incoming Document			
Title of the Document	**Structural Calculation of Diversion Tunnel Lining**		
Document/ DrawingNo.	UT1-C-010-CVL-DC-42005	Revision	0A
Review Document No.	**UT1-HEP-DHI-PC-D-0184**	Reviewed Note No.	**RN-0109**
Received Date	**31.03.2022**	Review status	**RR**
Outgoing Document			
Previous Reply No.	**N/A**	Previous Reply Date.	**N/A**
Reply No.	**RC-00XX**	Reply date	**26.04.2022**

Comments

1. Maximum block length with contraction joints shall be defined.

Reply: The arrangement of maximum block length with construction joints have been included in "UT1-PC-DHI-TE-MS-037 Concrete lining method statement of diversion tunnel". There is no contraction joints for concrete lining in design drawing.

2. A List of all applicable documents/ standards/ norms shall be shown.

Reply: Accepted. The applicable documents have been added in the calculation report.

3. The cross section has not a "horseshoe shape" nor a "D shape" but a rectangular shape plus an arc

section as already mentioned in various review notes, e. g. RN-0041, RN-0095.

Reply: Accepted. The cross section is renamed as reversed 'D' shaped type, the same as a rectangular shape plus an arc section.

4. As during flood season high flow velocities with abrasive materials will occur also at the tunnel roof,

full concrete lining shall be considered. Shotcrete has an irregular and rough surface which provokes

scouring, see also RN-0082.

Reply: According to Reply to OE Comments (RN-0025) on DOP (released in 29th Nov.2021) for River Diversion Scheme.

Plastic fiber shotcrete (fc'=25 MPa) can resist the flow velocity of 12m/s~15m/s. During flood season (1:20AEP), discharge of diversion tunnel is about 284.2m^3/s, and velocity of flow is about 12.4m/s. so the shotcrete can withstand the flow velocities during flood season.

5. Subchapter 2.2: The document number shall be corrected. The indicated drawing

number is applicable to the reinforcement drawing of the Diversion Tunnel intake structure.

Reply: Document number has been revised. And the drawing number of “outlie drawing of Diversion Tunnel lining” has been modified to UT1-C-010-CVL-DG-42005.